



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/617,335

07/10/2003

San-Jung Lee

DEE-PT122

2737

3624

7590

06/17/2004

VOLPE AND KOENIG, P.C.
UNITED PLAZA, SUITE 1600
30 SOUTH 17TH STREET
PHILADELPHIA, PA 19103

EXAMINER

TRAN, THUY V

ART UNIT

PAPER NUMBER

2821

DATE MAILED: 06/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application N .

10/617,335

Applicant(s)

LEE ET AL.

Examiner

Thuy V. Tran

Art Unit

2821

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 July 2003.
2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-10 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 10 July 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

This is a response to the Applicants' filing on 07/10/2003. In virtue of this filing, claims 1-10 are currently presented in the instant application.

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Inventorship

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Drawings Objection

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "operational amplifier" recited in line2 of claim 7 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended.

Art Unit: 2821

The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled “Replacement Sheet” in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-3, 5-6, and 8-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Hu et al. (U.S. Patent No. 5,107,184).

With respect to claim 1, Hu et al. discloses, in Figs. 1-3 and 5, a frequency-modulated dimming control system of a discharge lamp [30] comprising (1) a voltage regulator [14] having a variable output voltage (see col. 3, line 66 – col. 4, line 3) for converting an input voltage into a bus voltage, wherein a level of the bus voltage is a predetermined ratio of the input voltage, and (2) a ballast circuit [16₁, ..., 16_n] for driving the discharge lamp by detecting a variation of the bus voltage and then providing a current to the discharge lamp in response to a frequency

Art Unit: 2821

modulation of the ballast circuit and the variation of the bus voltage so as to control a light intensity of the discharge lamp.

With respect to claim 2, Fig. 3 of Hu et al. shows that the input voltage is an AC line voltage (which is one of a DC voltage and an AC line voltage as claimed).

With respect to claim 3, Fig. 3 of Hu et al. shows that the voltage regulator [14] is a transformer [T₁] (which is one of a power supply and a transformer as claimed).

With respect to claim 5, Fig. 5 of Hu et al. shows that the ballast circuit further comprises (1) a rectifier [67] for rectifying the bus voltage (see col. 6, line 7), (2) a voltage converter [114] for detecting the variation of the bus voltage and amplifying the variation to produce a dimming signal (see col. 6, line 8), and (3) a control integrated circuit [110] for controlling an output of the discharge lamp according to the dimming signal.

With respect to claim 6, Hu et al. discloses that the rectifier is a bridge circuit consisting of four rectifier diodes (see col. 6, line 7).

With respect to claim 8, Hu et al. discloses that the control system further comprises an inverter [112] (see Fig. 5) consisting of one switch [112], wherein the inverter is controlled by the control integrated circuit [110], seriously connected between the rectifier [67] and the discharge lamp and adjustably providing a current to the discharge lamp by altering a frequency (see col. 6, lines 14-22).

With respect to claim 9, Fig. 5 of Hu et al. shows that the switch [112] is a metal-oxide-semiconductor field-effect transistor (MOSFET).

With respect to claim 10, Hu et al. discloses that the control system further comprises an induction device [T_{104, 105}] seriously connected between the inverter and the discharge lamp for receiving energy from the inverter when the switch is off and providing the energy to the lamp.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hu et al. (U.S. Patent No. 5,107,184).

With respect to claim 4, Hu et al. discloses all of the claimed subject matter, as expressly recited in claim 1, except for the voltage predetermined ratio being 10%. However, as addressed above in claim 3, the voltage regulator [14] includes a transformer [T₁] having a primary winding [30] and secondary windings [32, 37] (see Fig. 3). Furthermore, it has been technically and theoretically understood that the voltage ratio of the voltage input to the voltage output is equal to the ratio of the number of turns of the coils or windings. Therefore, to modify the system of Hu et al. by rearranging the number of turns of the coils or windings of the transformer of Hu et al. to possess an expected output voltage, such as 10% of the input voltage, for a particular application or environment of use would have been deemed obvious to a person skilled in the art of electric lamp power supply.

8. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hu et al. (U.S. Patent No. 5,107,184) in view of Rodek et al. (U.S. Patent No. 3,961,236).

Art Unit: 2821

With respect to claim 7, Hu et al. discloses all of the claimed subject matter, as expressly recited in claims 1 and 6, except that the voltage regulator consists of an operational amplifier.

Rodek et al. Discloses, in Figs. 1-2, a voltage regulator [6] consisting of an operational amplifier [8, 10, 12].

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Hu et al. by employing, in lieu of the voltage regulator [14], an operational amplifier for effectively regulating voltage or power supplied to the lamp since such a use of the operational amplifier for the stated purpose has been well known in the art as evidenced by the teachings of Rodek et al. (see col. 4, lines 45-48).

Citation of relevant prior art

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Prior art Hu et al. (U.S. Patent No. 5,055,746) discloses a dimming ballast system.

Prior art Counts (U.S. Patent No. 4,866,350) discloses a fluorescent lamp ballast system.

Inquiry

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thuy V. Tran whose telephone number is (571) 272-1828. The examiner can normally be reached on M-F (8:00 AM -5:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong can be reached on (571) 272-1834. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2821

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Thuy V. Tran
Examiner
Art Unit 2821

T.T.
06/12/2004

A handwritten signature in black ink, appearing to read 'Thuy V. Tran', is written over the printed name and title.